Interference, 3/5/06, REA search

10/815,801

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	7914	(hydroxy or hydroxyl or carboxy or carboxyl) near5 (monocycle or monocyclic or cyclopentene or cyclohexene or cyclopentenyl or cyclohexyl or cyclohexenyl or cyclopenyl)	US-PGPUB; USPAT	OR	ON	2006/03/05 14:17
L2	1549	(hydroxy or hydroxyl or carboxy or carboxyl).clm. near5 (monocycle or monocyclic or cyclopentene or cyclohexene or cyclopentenyl or cyclohexyl or cyclohexenyl or cyclopenyl).clm.	US-PGPUB; USPAT	OR	ON	2006/03/05 14:18
L3	0	(acid adj labile).clm. near5 (monocycle or monocyclic or cyclopentene or cyclohexene or cyclopentenyl or cyclohexyl or cyclohexenyl or cyclopenyl).clm.	US-PGPUB; USPAT	OR	ON	2006/03/05 14:18
L4	0	(acid adj cleavable).clm. near5 (monocycle or monocyclic or cyclopentene or cyclohexene or cyclopentenyl or cyclohexyl or cyclohexenyl or cyclopenyl).clm.	US-PGPUB; USPAT	OR	ON	2006/03/05 14:18
L5	0	(acid adj cleaving).clm. near5 (monocycle or monocyclic or cyclopentene or cyclohexene or cyclopentenyl or cyclohexyl or cyclohexenyl or cyclopenyl).clm.	US-PGPUB; USPAT	OR	ON	2006/03/05 14:19
L6	0	(acid adj decomposing).clm. near5 (monocycle or monocyclic or cyclopentene or cyclohexene or cyclopentenyl or cyclohexyl or cyclohexenyl or cyclopenyl).clm.	US-PGPUB; USPAT	OR	ON	2006/03/05 14:19
L7	0	(acid adj decompos?ble).clm. near5 (monocycle or monocyclic or cyclopentene or cyclohexene or cyclopentenyl or cyclohexyl or cyclohexenyl or cyclopenyl).clm.	US-PGPUB; USPAT	OR	ON	2006/03/05 14:19
L8	0	(acid near2 protecting).clm. near5 (monocycle or monocyclic or cyclopentene or cyclohexene or cyclopentenyl or cyclohexyl or cyclohexenyl or cyclopenyl).clm.	US-PGPUB; USPAT	OR	ON	2006/03/05 14:20
L9	870	((fluoro or fluorine).clm. near3 (monomer or unit).clm.)"."	US-PGPUB; USPAT	OR	ON	2006/03/05 14:21
L10	870	((fluoro or fluorine) near3 (monomer or unit)).clm.	US-PGPUB; USPAT	OR	ON	2006/03/05 14:22

EAST Search History

L11	2	2 and 10	US-PGPUB; USPAT	OR	ON	2006/03/05 14:22

10/815,801 ; class/subclass search. 526/242, 250, 390, 430/905, 3/05/06, REA.

EAST Search History

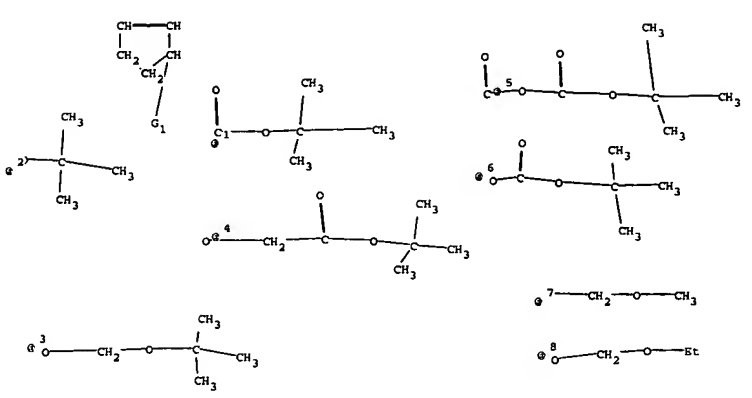
Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2149	526/242.ccls. or "526"/250.ccls. or 526/309.ccls. or 430/905.ccls.	US-PGPUB; USPAT	OR	ON	2006/03/05 13:56
L2	753	aliphatic near3 (monocyclic or monocycle or cyclopentene or cylcohexene)	US-PGPUB; USPAT	OR	ON	2006/03/05 14:04
L3	3452	(fluoro or fluorine) near3 monomer	US-PGPUB; USPAT	OR	ON	2006/03/05 13:59
L4	1	1 and 2 and 3	US-PGPUB; USPAT	OR	ON	2006/03/05 13:59
L5	40163	(monocyclic or monocycle or cyclopentene or cylcohexene)	US-PGPUB; USPAT	OR	ON	2006/03/05 14:04
L6	14	1 and 3 and 5	US-PGPUB; USPAT	OR	ON	2006/03/05 14:04
L7	13	6 not 4	US-PGPUB; USPAT	OR	ON	2006/03/05 14:04

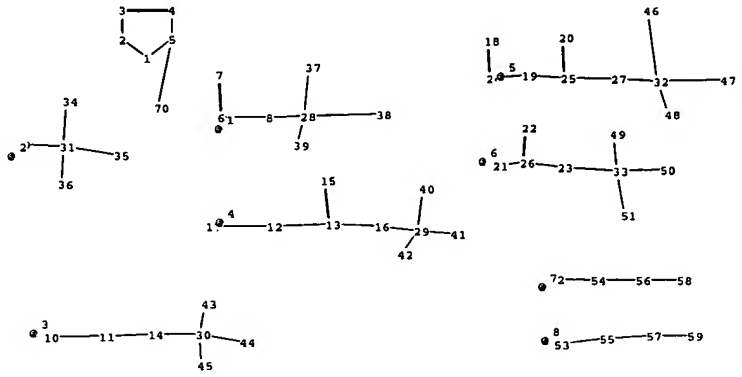
10/815,801; Text search
3/5/06, RA

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	"6908724".pn.	USPAT	OR	ON	2006/03/05 13:07
L2	1	"491619".ap.	US-PGPUB	OR	ON	2006/03/05 13:00
L3	1	"491619".ap.	US-PGPUB	OR	ON	2006/03/05 13:07
L4	1	"6143463".pn.	USPAT	OR	ON	2006/03/05 13:12
L5	474	(hydroxy or carboxy or carboxyl or hydroxyl) near3 (monocycle or monocyclic)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/05 13:25
L6	1	(acid adj labile or acid adj cleavable or acid adj cleaving) near3 (monocycle or monocyclic)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/05 13:27
L7	21411	(fluoro or fluorine) adj (polymer or copolymer or resin)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/05 13:28
L8	39404	(fluoro or fluorine) adj2 (polymer or copolymer or resin)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/05 13:29
L9	6	(5 or 6) and 8	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/05 13:21
L10	45094	tetrafluoroethylene or tetrfluoro adj ethylene	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/05 13:30
L11	6	(5 or 6) and 10	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/05 13:22

10/815,801, STN CA Req. File, 3/5/06 TCA
STNUC search





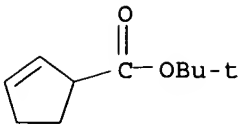
10/362,893

526/254

L5 ANSWER 1 OF 2 USPATFULL on STN
AN 2005:330493 USPATFULL
TI Novel fluorine-containing polymer having acid-reactive group and chemically amplifying type photoresist composition prepared from same
IN Araki, Takayuki, Osaka, JAPAN
Koh, Meiten, Osaka, JAPAN
Tanaka, Yoshito, Osaka, JAPAN
Ishikawa, Takuji, Osaka, JAPAN
Aoyama, Hirokazu, Osaka, JAPAN
Shimizu, Tetsuo, Osaka, JAPAN
PA DAIKIN INDUSTRIES, LTD. (non-U.S. corporation)
PI US 2005287471 A1 20051229
AI US 2005-33954 A1 20050113 (11)
RLI Continuation of Ser. No. US 2002-262893, filed on 3 Oct 2002, PENDING Continuation-in-part of Ser. No. WO 2001-JP2897, filed on 3 Apr 2001, UNKNOWN
PRAI JP 2000-102799 20000404
JP 2000-177494 20000613
JP 2001-61896 20010306
DT Utility
FS APPLICATION
LREP SUGHRUE MION, PLLC, 2100 PENNSYLVANIA AVENUE, N.W., SUITE 800, WASHINGTON, DC, 20037, US
CLMN Number of Claims: 27
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 7274
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB There is provided a novel fluorine-containing polymer having an acid-reactive group which has a high transparency against energy rays (radioactive rays) in a vacuum ultraviolet region (157 nm), and further there are provided a material for fluorine-containing base polymer prepared from the polymer and suitable for a photoresist and a chemically amplifying type resist composition obtained therefrom. The polymer has a number average molecular weight of from 1,000 to 1,000,000 and represented by the formula: -(M1)-(M2)-(A)-, wherein M1 is a structural unit having an acid-labile or acid-degradable functional group, M2 is a structural unit of fluorine-containing acryl ester, A is a structural unit derived from other copolymerizable monomer, the percent by mole ratio M1/M2 is 1 to 99/99 to 1 and the polymer comprises from 1 to 99% by mole of the structural unit M1, from 1 to 99% by mole of the structural unit M2 and from 0 to 98% by mole of the structural unit A1. The material for fluorine-containing base polymer comprises a fluorine-containing polymer having an acid-reactive group such as the above-mentioned polymer and is suitable for a photoresist, and the chemically amplifying type resist composition is obtained from those polymer and material.
IT **365568-54-3P**, 3-tert-Butoxycarbonylcyclopentene-tetrafluoroethylene copolymer
(preparation and use in chemical amplification type photoresists)
RN 365568-54-3 USPATFULL
CN 2-Cyclopentene-1-carboxylic acid, 1,1-dimethylethyl ester, polymer with tetrafluoroethene (9CI) (CA INDEX NAME)

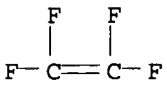
CM 1

CRN 251350-77-3
CMF C10 H16 O2



CM 2

CRN 116-14-3
CMF C2 F4



L5 ANSWER 2 OF 2 USPATFULL on STN
AN 2003:219574 USPATFULL
TI Novel fluorine-containing polymer having acid-reactive group and chemically amplifying type photoresist composition prepared from same
IN Araki, Takayuki, Osaka, JAPAN
Koh, Meiten, Osaka, JAPAN
Tanaka, Yoshito, Osaka, JAPAN
Ishikawa, Takuji, Osaka, JAPAN
Aoyama, Hirokazu, Osaka, JAPAN
Shimizu, Tetsuo, Osaka, JAPAN
PA Daikin Industries, Ltd. (non-U.S. corporation)
PI US 2003152864 A1 20030814
US 6908724 B2 20050621
AI US 2002-262893 A1 20021003 (10)
RLI Continuation-in-part of Ser. No. WO 2001-JP2897, filed on 3 Apr 2001, UNKNOWN
PRAI JP 2000-102799 20000404
JP 2000-177494 20000613
JP 2001-61896 20010306
DT Utility
FS APPLICATION
LREP SUGHRUE MION, PLLC, 2100 PENNSYLVANIA AVENUE, N.W., WASHINGTON, DC, 20037
CLMN Number of Claims: 152
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 9093
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB There is provided a novel fluorine-containing polymer having an acid-reactive group which has a high transparency against energy rays (radioactive rays) in a vacuum ultraviolet region (157 nm), and further there are provided a material for fluorine-containing base polymer prepared from the polymer and suitable for a photoresist and a chemically amplifying type resist composition obtained therefrom.

The polymer has a number average molecular weight of from 1,000 to 1,000,000 and represented by the formula:

-(M1)-(M2)-(A)-,

wherein M1 is a structural unit having an acid-labile or acid-degradable functional group, M2 is a structural unit of fluorine-containing acryl ester, A is a structural unit derived from other copolymerizable monomer, the percent by mole ratio M1/M2 is 1 to 99/99 to 1 and the

polymer comprises from 1 to 99% by mole of the structural unit M1, from 1 to 99% by mole of the structural unit M2 and from 0 to 98% by mole of the structural unit A1. The material for fluorine-containing base polymer comprises a fluorine-containing polymer having an acid-reactive group such as the above-mentioned polymer and is suitable for a photoresist, and the chemically amplifying type resist composition is obtained from those polymer and material.

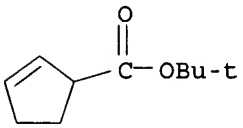
IT **365568-54-3P**, 3-tert-Butoxycarbonylcyclopentene-tetrafluoroethylene copolymer
(preparation and use in chemical amplification type photoresists)

RN 365568-54-3 USPATFULL

CN 2-Cyclopentene-1-carboxylic acid, 1,1-dimethylethyl ester, polymer with tetrafluoroethene (9CI) (CA INDEX NAME)

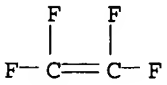
CM 1

CRN 251350-77-3
CMF C10 H16 O2



CM 2

CRN 116-14-3
CMF C2 F4



=>

L18 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:335425 CAPLUS
DN 138:346493
TI Method of forming fine pattern by chemically amplified photoresist
IN Toriumi, Minoru; Yamazaki, Tamio; Watanabe, Hiroyuki; Itani, Toshiro; Araki, Takayuki; Koh, Meiten; Ishikawa, Takuji
PA Semiconductor Leading Edge Technologies, Inc., Japan; Daikin Industries, Ltd.
SO PCT Int. Appl., 81 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 1

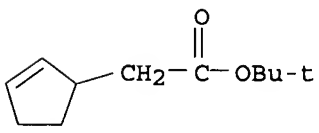
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003036390	A1	20030501	WO 2002-JP10243	20021002
	W: JP, KR, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR				
	EP 1439422	A1	20040721	EP 2002-772967	20021002
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR, BG, CZ, EE, SK				
	US 2004248042	A1	20041209	US 2004-491619	20040402
PRAI	JP 2001-307520	A	20011003		
	WO 2002-JP10243	W	20021002		

AB The invention relates to a method of forming a fine resist pattern which includes the step of forming on a substrate a photosensitive layer from a photosensitive composition comprising at least a compound which generates an acid upon irradiation with light and a fluoropolymer, wherein the fluoropolymer is represented by the formula: -(M1)-(M2)-(A1)- wherein structural unit M1 is a structural unit which is derived from a fluoromonomer and in which any of the carbon atoms constituting part of the polymer main chain has at least one fluorine atom bonded thereto; structural unit M2 is a structural unit comprising an aliphatic ring structure incorporated in the polymer main chain; structural unit A1 is a structural unit derived from a monomer copolymerizable with the structural units M1 and M2; and the fluoropolymer has an acid-reactive substituent Y.

IT **509085-37-4P**
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(photoresist composition)
RN 509085-37-4 CAPLUS
CN 2-Cyclopentene-1-acetic acid, 1,1-dimethylethyl ester, polymer with tetrafluoroethene (9CI) (CA INDEX NAME)

CM 1

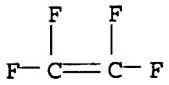
CRN 342005-61-2
CMF C11 H18 O2



CM 2

CRN 116-14-3

CMF C2 F4



RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:301117 CAPLUS
DN 138:304711
TI Novel fluoropolymer, resist compositions containing the same, and novel fluoromonomers
IN Araki, Takayuki; Ishikawa, Takuji; Koh, Meiten
PA Daikin Industries, Ltd., Japan
SO PCT Int. Appl., 153 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003031487	A1	20030417	WO 2002-JP10242	20021002
	W: JP, KR, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR				
	EP 1449860	A1	20040825	EP 2002-772966	20021002
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR, BG, CZ, EE, SK				
	US 2004191680	A1	20040930	US 2004-815801	20040402
PRAI	JP 2001-307823	A	20011003		
	JP 2002-54964	A	20020228		
	WO 2002-JP10242	W	20021002		

OS MARPAT 138:304711
AB The present invention relates to a fluorocopolymer having aliphatic monocyclic structures in the backbone chain, as represented by the general formula (M1)(M2a)(N) wherein structural unit (M1) is a unit derived from an ethylenic monomer having two or three carbon atoms and at least one fluorine atom; structural unit (M2a) is at least one kind of unit represented by the general formula I and forming an aliphatic monocyclic structure in the backbone chain; and structural unit (N) is a unit derived from a monomer copolymerizable with structural units (M1) and (M2a), which comprises 1 to 99 mol% of structural units (M1), 1 to 99 mol% of structural units (M2a) and 0 to 98 mol% of structural units (N) and has a number-average mol. weight of 500 to 1,000,000. In the formula I, R1 is at least one group selected from among divalent hydrocarbon groups which each have one to eight ring-constituting carbon atoms and may be substituted with hydrocarbyl or fluoroalkyl, and divalent hydrocarbon groups which each have an ether linkage with the sum of ring-constituting carbon and oxygen atoms ranging from 2 to 8 and may be substituted with hydrocarbyl or fluoroalkyl; R2 is alkylene having one to three ring-constituting carbon atoms; R3 and R4 are each independently alkylene having one or two carbon atoms; and n1, n2, and n3 are each independently 0 or 1. This fluorocopolymer exhibits excellent dry etching resistance and transparency in the vacuum UV region. Thus, 3.4 g cyclopentene and 10.0 g tetrafluoroethylene were reacted in HCFC 141b containing bis(4-tert-butylcyclohexyl) peroxydicarbonate to give a 50:50 mol% copolymer with Mn 5700.
IT **509085-37-4P**
RL: IMF (Industrial manufacture); PRP (Properties); RCT (Reactant); TEM

(Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of fluoropolymers or fluoromonomers useful for photoresist compns.)

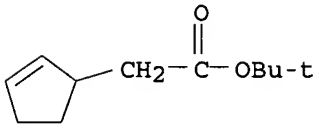
RN 509085-37-4 CAPLUS

CN 2-Cyclopentene-1-acetic acid, 1,1-dimethylethyl ester, polymer with tetrafluoroethene (9CI) (CA INDEX NAME)

CM 1

CRN 342005-61-2

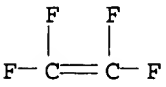
CMF C11 H18 O2



CM 2

CRN 116-14-3

CMF C2 F4



IT **509085-37-4DP**, hydrolyzed

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation of fluoropolymers or fluoromonomers useful for photoresist compns.)

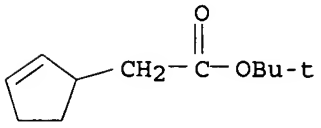
RN 509085-37-4 CAPLUS

CN 2-Cyclopentene-1-acetic acid, 1,1-dimethylethyl ester, polymer with tetrafluoroethene (9CI) (CA INDEX NAME)

CM 1

CRN 342005-61-2

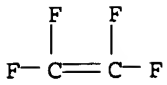
CMF C11 H18 O2



CM 2

CRN 116-14-3

CMF C2 F4



RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:747864 CAPLUS
DN 135:310923
TI Novel fluoropolymer having acid-reactive group and chemical amplification type photoresist composition containing the same
IN Araki, Takayuki; Koh, Meiten; Tanaka, Yoshito; Ishikawa, Takuji; Aoyama, Hirokazu; Shimizu, Tetsuo
PA Daikin Industries, Ltd., Japan
SO PCT Int. Appl., 363 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001074916	A1	20011011	WO 2001-JP2897	20010403
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	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 2001044719	A5	20011015	AU 2001-44719	20010403
	EP 1275666	A1	20030115	EP 2001-917810	20010403
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	TW 588220	B	20040521	TW 2001-90107955	20010403
	US 2003152864	A1	20030814	US 2002-262893	20021003
	US 6908724	B2	20050621		
	US 2005287471	A1	20051229	US 2005-33954	20050113
PRAI	JP 2000-102799	A	20000404		
	JP 2000-177494	A	20000613		
	JP 2001-61896	A	20010306		
	WO 2001-JP2897	W	20010403		
	US 2002-262893	A1	20021003		

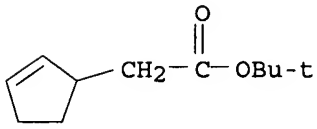
AB A novel fluoropolymer having acid-reactive groups which highly transmits energy rays (radiation) in the vacuum UV region (157 nm); and a fluoropolymer base material which contains the fluoropolymer and is suitable for use in a photoresist. The fluoropolymer has a segment represented by the formula -(M1)-(M2)-(A)- (wherein M1 is a structural unit having a functional group which is eliminated or decomposed with an acid; M2 is a structural unit derived from a fluoroacrylate; and A is a structural unit derived from other copolymerizable monomer), comprises 1 to 99 mol the structural unit (M1), 1 to 99 mol the structural unit (M2), and 0 to 98 mol the structural unit (A1), provided that (M1)/(M2) is from 1/99 to 99/1 by mole, and has a number-average mol. weight of 1,000 to 1,000,000.
The fluoropolymer base material contains a fluoropolymer having acid-reactive groups, such as the fluoropolymer described above, and is suitable for use in a photoresist.

IT **342005-62-3P**
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(preparation and use in chemical amplification type photoresists)
RN 342005-62-3 CAPLUS
CN 2-Cyclopentene-1-acetic acid, 1,1-dimethylethyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 342005-61-2
CMF C11 H18 O2



RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:388946 CAPLUS
DN 135:12120
TI Radiation-sensitive resist composition containing acid generator and cyclic hydrocarbon polymer
IN Ogata, Toshiyuki; Komano, Hiroshi
PA Tokyo Ohka Kogyo Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

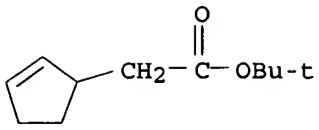
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2001147534	A2	20010529	JP 1999-328710	19991118
PRAI JP 1999-328710		19991118		

NO(=) w/ F sub.

AB The resist composition, sensitive to super shortwave radiations, comprises ≥1 base polymer selected from (A) a homopolymer of a cyclic unsatd. hydrocarbon monomer (a) having ≥1 acid-releasable dissoln. inhibiting group and a polymerizable double bond, (A') a copolymer of (a) and an unsatd. hydrocarbon monomer having OH or alkoxy group and a polymerizable double bond, and (A'') a copolymer of (a) and non-substituted cyclic unsatd. hydrocarbon having a polymerizable double bond, and (B) a compound generating an acid by radiation of actinic ray. Photolysis and crosslinking reaction of the base polymer is prevented even under the lithog. process using radiation with wavelength ≤160nm and the composition shows good dry etching resistance.
IT **342005-62-3**
RL: TEM (Technical or engineered material use); USES (Uses)
(radiation resist composition containing acid generator and base polymer from
cyclic unsatd. hydrocarbon)
RN 342005-62-3 CAPLUS
CN 2-Cyclopentene-1-acetic acid, 1,1-dimethylethyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 342005-61-2
CMF C11 H18 O2



L18 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:502622 CAPLUS
DN 129:195802
TI Photosensitive film, photoresist, and semiconductor device using photosensitive copolymer and manufacture of them
IN Chung, Jae Chang; Baek, Chul Kei; Paek, Ki Koh
PA Hyundai Electronics Industries Co., Ltd., S. Korea
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10207070	A2	19980807	JP 1997-353131	19971222
	JP 3269796	B2	20020402		
	KR 211548	B1	19990802	KR 1996-68906	19961220
	US 6143463	A	20001107	US 1997-992033	19971217
	TW 464788	B	20011121	TW 1997-86119045	19971217
	GB 2320501	A1	19980624	GB 1997-27095	19971222
	GB 2320501	B2	20010214		
PRAI	KR 1996-68906	A	19961220		

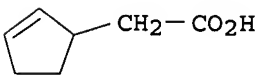
AB A copolymer is claimed, which is obtained by polymerization of ≥2 alicyclic olefins selected from 2-cyclopentene-1-acetic acid, 2-cyclopentene-1-(tert-Bu acetate), bicyclo[2,2,2]oct-5-ene-2-tert-Bu carboxylate, bicyclo[2,2,2]oct-5-ene-2-carboxylic acid, 2-tert-Bu carboxylate-5-norbornene, 2-carboxylic acid-5-norbornene, cyclopentene, cyclohexene, norbornylene, and norbornylene-2-methanol. A method of preparing the copolymer comprises the steps of adding the olefins in a pressure reactor, adding an initiator in the reactor, making the reactor to an Ar or N atmospheric, and controlling the reactor at a temperature higher than approx.50° and a pressure higher than approx. 40 atm pressure to react the olefins. A photoresist and semiconductor device using the copolymer and methods of manufacturing them are also claimed. The photosensitive film provides high resolution patterns by lithog. process using far UV rays.

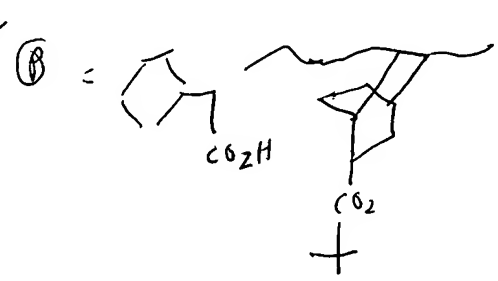
IT **211757-74-3P 211757-75-4P**
RL: DEV (Device component use); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(manufacture of photosensitive film, photoresist, and semiconductor device using photosensitive copolymer)

RN 211757-74-3 CAPLUS
CN 2-Cyclopentene-1-acetic acid, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 13668-61-6
CMF C7 H10 O2

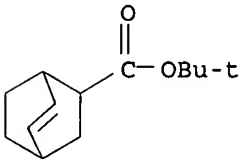




RN 211757-75-4 CAPLUS
CN Bicyclo[2.2.2]oct-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester, polymer with 2-cyclopentene-1-acetic acid (9CI) (CA INDEX NAME)

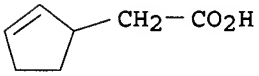
CM 1

CRN 210040-19-0
CMF C13 H20 O2



CM 2

CRN 13668-61-6
CMF C7 H10 O2



L18 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1982:572462 CAPLUS
DN 97:172462
TI Aqueous developable poly(olefin sulfone) terpolymers
IN Pampalone, Thomas R.
PA RCA Corp. , USA
SO U.S., 5 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4341861	A	19820727	US 1980-219517	19801223
	US 4393160	A	19830712	US 1982-347107	19820209
PRAI	US 1980-219517	A3	19801223		

AB Terpolymers of 3-methylcyclopentene, 2-cyclopentene-1-acetic acid, and SO2, which are soluble in aqueous alkaline solns., are described for use as pos.-working electron-beam resist materials. The terpolymers have an excellent sensitivity and development latitude. Thus, a solution containing 2-cyclopentene-1-acetic acid 2.0 and 3-methylcyclopentene 8.0 mL was mixed with 90% tert-butyl hydroperoxide 0.2 mL. This solution was added dropwise to an agitated mixture of SO2 15 and anhydr. EtOH 15 mL at -30° under an inert atmospheric, the SO2 allowed to boil off, the residue dissolved in THF, and fractionated by precipitation with MeOH. The fractionated polymer was then dissolved in 2-methoxyethyl acetate to give a 6% solution, coated on a Cr/glass support, and dried to give a 0.5 μm thick layer which was then exposed at 0.4 μ coulomb/cm2 through a mask consisting of 3 mm bars and spaces. When developed in a developer composed of Riston II Developer 20 and 2-methoxyethyl acetate 8 mL, a development latitude of 1 to 2 min and 23 to 25° was obtained.

IT **83419-95-8**

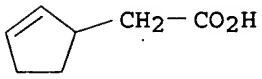
RL: USES (Uses)
(electron-beam resist, pos.-working, with development by aqueous solns.)

RN 83419-95-8 CAPLUS

CN 2-Cyclopentene-1-acetic acid, polymer with 3-methylcyclopentene and sulfur dioxide (9CI) (CA INDEX NAME)

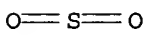
CM 1

CRN 13668-61-6
CMF C7 H10 O2



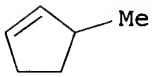
CM 2

CRN 7446-09-5
CMF O2 S



CM 3

CRN 1120-62-3
CMF C6 H10



L18 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1977:180644 CAPLUS

DN 86:180644

TI The examination of functionally substituted olefin sulfone copolymers as electron beam-sensitive materials

AU Himics, R. J.; Kaplan, M.; Desai, N. V.; Poliniak, E. S.

CS David Sarnoff Res. Cent., RCA Lab., Princeton, NJ, USA

SO Papers presented at [the] Meeting - American Chemical Society, Division of Organic Coatings and Plastics Chemistry (1975), 35(2), 273-80
CODEN: ACOCAO; ISSN: 0096-512X

DT Journal

LA English

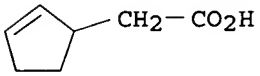
AB A wide selection of functionally substituted olefins was used to prepare several poly(olefin sulfone) materials as electron-beam resists. The synthesis and evaluation experience with alc., acid, halogen, acid chloride, ketone, and unconjugated diolefin monomeric materials copolymd. with SO2 are discussed. Some problems encountered with initial solubility of the polymer as well as with choosing useful developers are presented. Approaches to producing high initial mol. weight poly(olefin sulfone) materials by thermal or photochem. crosslinking are discussed, along with some experience with utilizing terpolymers to modify phys. properties and to incorporate desired chemical reactivity.

IT **62783-07-7**
RL: USES (Uses)

(electron-beam resist from)
RN 62783-07-7 CAPLUS
CN 2-Cyclopentene-1-acetic acid, polymer with sulfur dioxide (9CI) (CA INDEX NAME)

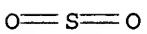
CM 1

CRN 13668-61-6
CMF C7 H10 O2



CM 2

CRN 7446-09-5
CMF O2 S



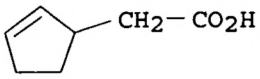
L18 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1975:444175 CAPLUS
DN 83:44175
TI Graft copolymers of polyolefins and cyclic acid and acid anhydride monomers
IN Wu, William C. L.; Krebaum, Lawrence J.; Machonis, John, Jr.
PA Chemplex Co., USA
SO U.S., 7 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 3873643	A	19750325	US 1972-316230	19721218
PRAI US 1972-316230	A	19721218		

AB Olefin polymers were grafted with cyclic acids and anhydrides to give polymers with high-melt indexes and good tensile properties. Thus, a high-d. polyethylene powder was sprayed with an acetone solution of tetrahydrophthalic anhydride (I) and fed through a 5 zone screw extruder, during which time a tert-butyl hydroperoxide catalyst solution was added. The graft copolymer [55618-91-2] containing 0.5% I, had a melt index 0.24 tensile yield 4560 psi, tensile break 3290 psi, and elongation 850%. A composition of this copolymer containing 40% TiO2 had the above properties resp. 4680 psi, 2650 psi, and 150% as compared with a high-d. polyethylene control containing 40% TiO2 with 4260 psi, 4260 psi, and <10%.
IT **55618-89-8**
RL: USES (Uses)
(graft)
RN 55618-89-8 CAPLUS
CN 2-Cyclopentene-1-acetic acid, polymer with ethene (9CI) (CA INDEX NAME)

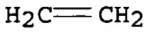
CM 1

CRN 13668-61-6
CMF C7 H10 O2



CM 2

CRN 74-85-1
CMF C2 H4



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ON 05 MAR 2006)

FILE 'REGISTRY' ENTERED AT 12:21:37 ON 05 MAR 2006
L1 SCREEN 2067
L2 STRUCTURE UPLOADED
L3 QUE L2 AND L1
L4 1 S L3 FULL

FILE 'USPATFULL' ENTERED AT 12:22:38 ON 05 MAR 2006
L5 2 S L4

FILE 'REGISTRY' ENTERED AT 12:23:38 ON 05 MAR 2006
L6 SCREEN 2067
L7 STRUCTURE UPLOADED
L8 QUE L7 AND L6
L9 0 S L8 FULL
L10 SCREEN 2067
L11 STRUCTURE UPLOADED
L12 QUE L11 AND L10
L13 0 S L12 FULL
L14 SCREEN 2067
L15 STRUCTURE UPLOADED
L16 QUE L15 AND L14
L17 7 S L16 FULL

FILE 'CAPLUS' ENTERED AT 12:26:10 ON 05 MAR 2006
L18 8 S L17
L19 25624 S TETRAFLUOROETHYLENE OR TETRAFLUORO ETHYLENE
L20 172 S DICHLORODIFLUOROETHYLENE OR CHLOROFLUORODIFLUOROETHYLENE
L21 2 S DICHLORODIFLUORO ETHYLENE OR CHLOROFLUORODIFLUORO ETHYLENE

FILE 'REGISTRY' ENTERED AT 12:31:16 ON 05 MAR 2006
L22 0 S CHLOROFLUORODIFLUORO ETHYLENE

FILE 'CAPLUS' ENTERED AT 12:32:00 ON 05 MAR 2006
L23 1 S L4
L24 3 S (L23 OR L18) AND (L19 OR L20 OR L21)

=>

chlorotrifluoro ethylene

L24 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:335425 CAPLUS
DN 138:346493
TI Method of forming fine pattern by chemically amplified photoresist
IN Toriumi, Minoru; Yamazaki, Tamio; Watanabe, Hiroyuki; Itani, Toshiro; Araki, Takayuki; Koh, Meiten; Ishikawa, Takuji
PA Semiconductor Leading Edge Technologies, Inc., Japan; Daikin Industries, Ltd.
SO PCT Int. Appl., 81 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003036390	A1	20030501	WO 2002-JP10243	20021002
W: JP, KR, US				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR				
EP 1439422	A1	20040721	EP 2002-772967	20021002
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR, BG, CZ, EE, SK				
US 2004248042	A1	20041209	US 2004-491619	20040402
PRAI JP 2001-307520	A	20011003		
WO 2002-JP10243	W	20021002		

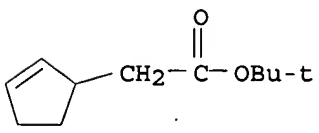
AB The invention relates to a method of forming a fine resist pattern which includes the step of forming on a substrate a photosensitive layer from a photosensitive composition comprising at least a compound which generates an acid upon irradiation with light and a fluoropolymer, wherein the fluoropolymer is represented by the formula: -(M1)-(M2)-(A1)- wherein structural unit M1 is a structural unit which is derived from a fluoromonomer and in which any of the carbon atoms constituting part of the polymer main chain has at least one fluorine atom bonded thereto; structural unit M2 is a structural unit comprising an aliphatic ring structure incorporated in the polymer main chain; structural unit A1 is a structural unit derived from a monomer copolymerizable with the structural units M1 and M2; and the fluoropolymer has an acid-reactive substituent Y.

IT **509085-37-4P**
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(photoresist composition)

RN 509085-37-4 CAPLUS
CN 2-Cyclopentene-1-acetic acid, 1,1-dimethylethyl ester, polymer with tetrafluoroethene (9CI) (CA INDEX NAME)

CM 1

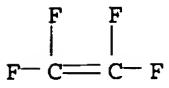
CRN 342005-61-2
CMF C11 H18 O2



CM 2

CRN 116-14-3

CMF C2 F4



RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:301117 CAPLUS
DN 138:304711
TI Novel fluoropolymer, resist compositions containing the same, and novel fluoromonomers
IN Araki, Takayuki; Ishikawa, Takuji; Koh, Meiten
PA Daikin Industries, Ltd., Japan
SO PCT Int. Appl., 153 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003031487	A1	20030417	WO 2002-JP10242	20021002
	W: JP, KR, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR				
	EP 1449860	A1	20040825	EP 2002-772966	20021002
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR, BG, CZ, EE, SK				
	US 2004191680	A1	20040930	US 2004-815801	20040402
PRAI	JP 2001-307823	A	20011003		
	JP 2002-54964	A	20020228		
	WO 2002-JP10242	W	20021002		

OS MARPAT 138:304711
AB The present invention relates to a fluorocopolymer having aliphatic monocyclic structures in the backbone chain, as represented by the general formula (M1)(M2a)(N) wherein structural unit (M1) is a unit derived from an ethylenic monomer having two or three carbon atoms and at least one fluorine atom; structural unit (M2a) is at least one kind of unit represented by the general formula I and forming an aliphatic monocyclic structure in the backbone chain; and structural unit (N) is a unit derived from a monomer copolymerizable with structural units (M1) and (M2a), which comprises 1 to 99 mol% of structural units (M1), 1 to 99 mol% of structural units (M2a) and 0 to 98 mol% of structural units (N) and has a number-average mol. weight of 500 to 1,000,000. In the formula I, R1 is at least one group selected from among divalent hydrocarbon groups which each have one to eight ring-constituting carbon atoms and may be substituted with hydrocarbyl or fluoroalkyl, and divalent hydrocarbon groups which each have an ether linkage with the sum of ring-constituting carbon and oxygen atoms ranging from 2 to 8 and may be substituted with hydrocarbyl or fluoroalkyl; R2 is alkylene having one to three ring-constituting carbon atoms; R3 and R4 are each independently alkylene having one or two carbon atoms; and n1, n2, and n3 are each independently 0 or 1. This fluorocopolymer exhibits excellent dry etching resistance and transparency in the vacuum UV region. Thus, 3.4 g cyclopentene and 10.0 g **tetrafluoroethylene** were reacted in HCFC 141b containing bis(4-tert-butylcyclohexyl) peroxydicarbonate to give a 50:50 mol% copolymer with Mn 5700.
IT **509085-37-4P**
RL: IMF (Industrial manufacture); PRP (Properties); RCT (Reactant); TEM

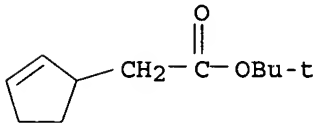
(Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of fluoropolymers or fluoromonomers useful for photoresist compns.)

RN 509085-37-4 CAPLUS

CN 2-Cyclopentene-1-acetic acid, 1,1-dimethylethyl ester, polymer with tetrafluoroethene (9CI) (CA INDEX NAME)

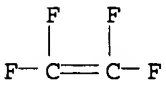
CM 1

CRN 342005-61-2
CMF C11 H18 O2



CM 2

CRN 116-14-3
CMF C2 F4



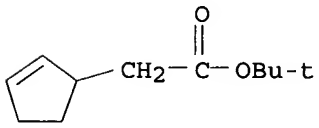
IT **509085-37-4DP**, hydrolyzed
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation of fluoropolymers or fluoromonomers useful for photoresist compns.)

RN 509085-37-4 CAPLUS

CN 2-Cyclopentene-1-acetic acid, 1,1-dimethylethyl ester, polymer with tetrafluoroethene (9CI) (CA INDEX NAME)

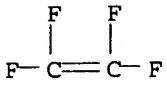
CM 1

CRN 342005-61-2
CMF C11 H18 O2



CM 2

CRN 116-14-3
CMF C2 F4



RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:747864 CAPLUS
DN 135:310923
TI Novel fluoropolymer having acid-reactive group and chemical amplification type photoresist composition containing the same
IN Araki, Takayuki; Koh, Meiten; Tanaka, Yoshito; Ishikawa, Takuji; Aoyama, Hirokazu; Shimizu, Tetsuo
PA Daikin Industries, Ltd., Japan
SO PCT Int. Appl., 363 pp.
CODEN: PIXXD2
DT Patent
LA Japanese

NO= clms read on Nb (Polycyclic) Not monocyclic

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001074916	A1	20011011	WO 2001-JP2897	20010403
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 2001044719	A5	20011015	AU 2001-44719	20010403
EP 1275666	A1	20030115	EP 2001-917810	20010403
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
TW 588220	B	20040521	TW 2001-90107955	20010403
US 2003152864	A1	20030814	US 2002-262893	20021003
US 6908724	B2	20050621		
US 2005287471	A1	20051229	US 2005-33954	20050113
PRAI JP 2000-102799	A	20000404		
JP 2000-177494	A	20000613		
JP 2001-61896	A	20010306		
WO 2001-JP2897	W	20010403		
US 2002-262893	A1	20021003		

cl to cmk Not(1)

cl. Do not use.

AB A novel fluoropolymer having acid-reactive groups which highly transmits energy rays (radiation) in the vacuum UV region (157 nm); and a fluoropolymer base material which contains the fluoropolymer and is suitable for use in a photoresist. The fluoropolymer has a segment represented by the formula -(M1)-(M2)-(A)- (wherein M1 is a structural unit having a functional group which is eliminated or decomposed with an acid; M2 is a structural unit derived from a fluoroacrylate; and A is a structural unit derived from other copolymerizable monomer), comprises 1 to 99 mol the structural unit (M1), 1 to 99 mol the structural unit (M2), and 0 to 98 mol the structural unit (A1), provided that (M1)/(M2) is from 1/99 to 99/1 by mole, and has a number-average mol. weight of 1,000 to 1,000,000.

The fluoropolymer base material contains a fluoropolymer having acid-reactive groups, such as the fluoropolymer described above, and is suitable for use in a photoresist.

IT **342005-62-3P 365568-54-3P**, 3-tert-Butoxycarbonylcyclopentene-**tetrafluoroethylene** copolymer
RL: SPN (Synthetic preparation); TEM (Technical or engineered material

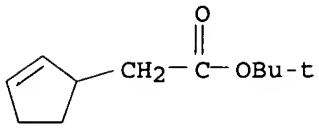
use); PREP (Preparation); USES (Uses)
(preparation and use in chemical amplification type photoresists)

RN 342005-62-3 CAPLUS

CN 2-Cyclopentene-1-acetic acid, 1,1-dimethylethyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 342005-61-2
CMF C11 H18 O2

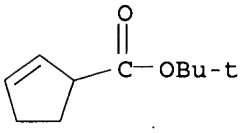


RN 365568-54-3 CAPLUS

CN 2-Cyclopentene-1-carboxylic acid, 1,1-dimethylethyl ester, polymer with tetrafluoroethene (9CI) (CA INDEX NAME)

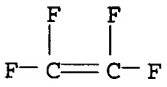
CM 1

CRN 251350-77-3
CMF C10 H16 O2



CM 2

CRN 116-14-3
CMF C2 F4



RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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